

1175
A45
no. 1816A
ENGINE STORAGE
Engineering



Allis-Chalmers

Manufacturing Company

Bulletin No. 1816-A

Mining Machinery Department

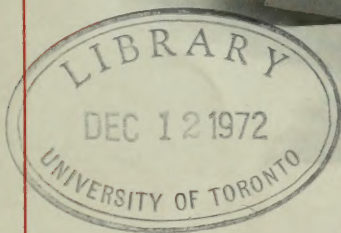
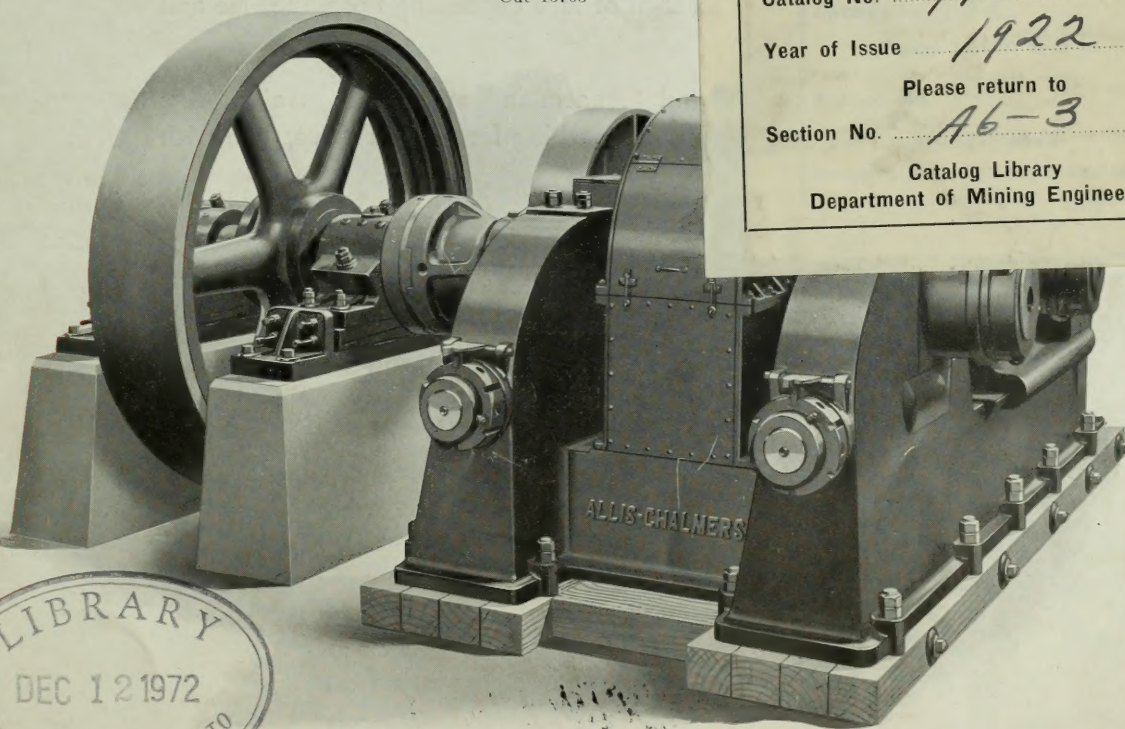
October 1922

CRUSHING ROLLS

(VARIOUS TYPES)

Cut 15703

Catalog No. 118
Year of Issue 1922
Please return to
Section No. A6-3
Catalog Library
Department of Mining Engineering



"XX" Type Straight Line Rolls

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MILWAUKEE, WISCONSIN, U. S. A. By Allis-Chalmers Manufacturing Co.

CRUSHING ROLLS

We show and briefly describe herein rolls of various designs which have been manufactured and applied successfully for many years.

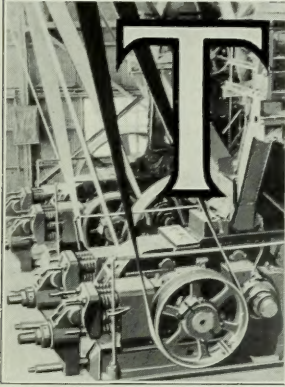
The machines vary in spring pressure up to 25,000 pounds per lineal inch of face depending upon the size and type of roll.

The "XX" and "Anaconda" are of the straight line type, thus keeping all crushing forces in a direct line with the springs.

The following pages contain descriptions, cuts and dimensions of the sizes in which these rolls are manufactured.

We invite correspondence on crushing problems and our engineering service is always available to render assistance in the selection of suitable equipment.

Cut No. 14084



THE bed plates or roll frames are of cast iron either of the box or ribbed section type as indicated in the cuts. The slides or guides for the movable bearing brackets are planed and fitted with removable steel wearing plates which take the wear that would otherwise occur on the frame proper. The frames are also planed on the bottom to facilitate proper setting on the foundation.

The bearings of the "XX" and "A" type of rolls are in one piece, or solid type arranged to swivel in their seats. The bearings of the "Anaconda" are of the two piece type having removable caps. The movable bearings are carried in sliding pedestals and arranged to swivel in their seats so the roll shaft can accommodate itself to the free passage of any foreign substance entering the machine with the feed; this lessens the shock to which the rolls would otherwise be subjected. All bearings are lined with special high grade babbitt metal most suitable for the service, and also having large reservoirs for using oil or grease as a lubricant. The covers for the reservoirs are of the hinged type made of canvas with iron weights, which effectually prevents the admission of dust.

The sliding pedestals are of cast iron planed on the bottom for fitting to roll frame. The top of the pedestals are provided with suitable machined swivel seats into which the movable shaft bearings are placed.

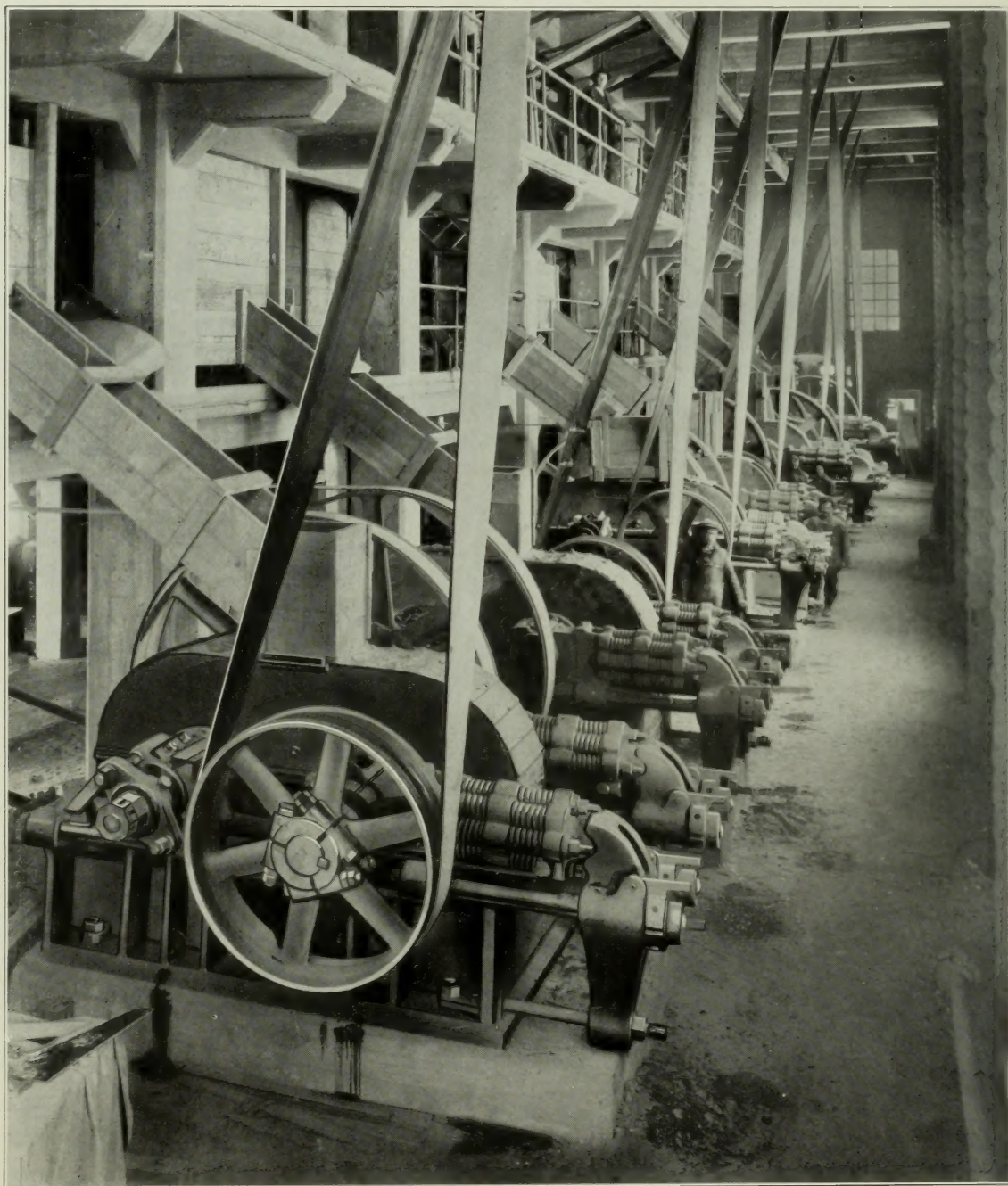
The roll shafts are extra heavy and made of forged steel, machined all over.

The heads or cores of each roll are of cast iron and consist of two parts, one termed a tight head, which is pressed on the shaft, the other, a loose head, is split and made a sliding fit over the extended hub of the tight head. The heads are turned tapering towards the center to correspond with the bore of the roll shell. The roll shell is clamped tight on the heads by means of drawing in the loose heads with heavy bolts.

The shells are accurately finished to template to suit the heads, and are usually made of high carbon steel of a quality similar to locomotive tires. They may be also furnished in manganese or other special steels when desired.

ALLIS-CHALMERS MANUFACTURING COMPANY

Cut No. 14081



INSTALLATION OF "ANACONDA" TYPE CRUSHING ROLLS

2 Sets 42" x 16" Rolls

5 Sets 40" x 15" Rolls

Chateaugay Ore & Iron Co., (Mill No. 3.) Lyon Mountain, N. Y.
Iron Ore Magnetic Concentrating Plant

CRUSHING ROLLS

The pulleys are made extra heavy and of various designs to suit the particular type of roll. The large pulley which is the main driver, is placed on the stationary shaft and is of sufficient size to transmit the required power. The small pulley is placed on the movable shaft driven by a crossed belt so as to run in the opposite direction to the pulley on the stationary roll. Both rolls must run at the same speed to get the best results.

Both roll shafts are fitted with side adjusting collars so as to permit the shifting of rolls either way.

The housings are practically dust proof, being made of cast iron with machined joints along the center line of the roll shafts and fitted with hinged covers on the ends to permit inspection of the shells while in operation. White iron adjustable liners are attached to sides of upper half of housing at the center of rolls. A feed hopper is attached to top of housing fitted with a distributing plate so as to deliver an even feed across the face of the shells.

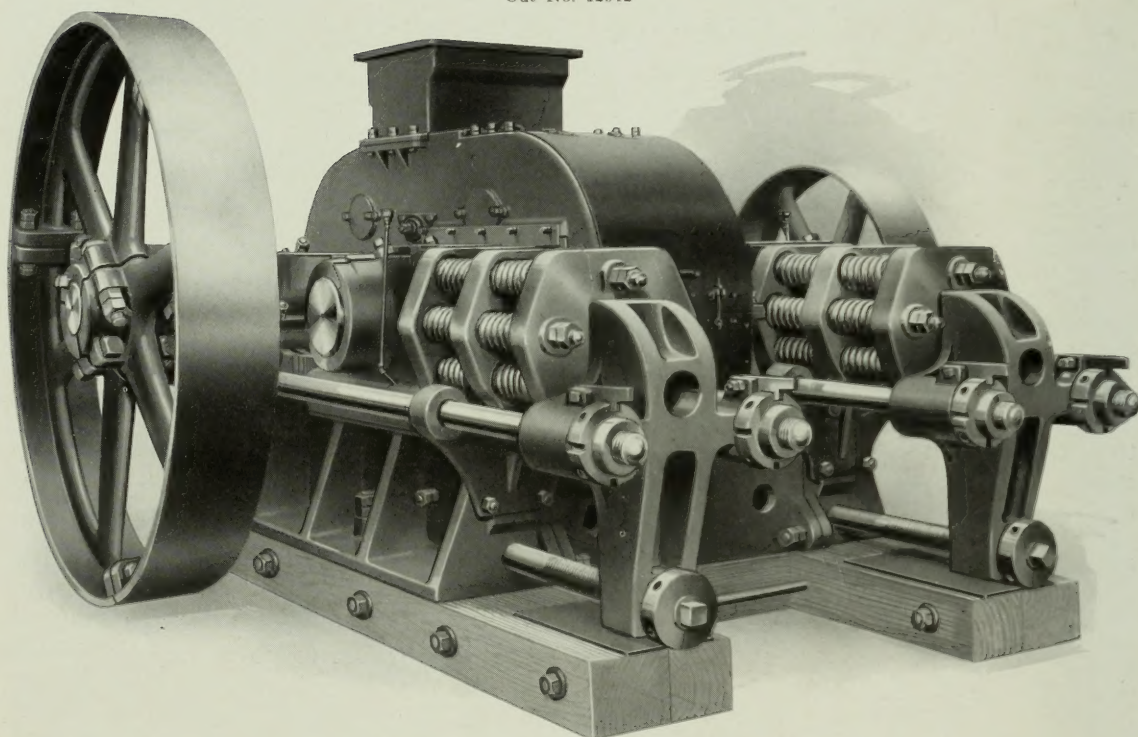
The crushing strains are taken up by powerful nests of springs, the springs being set to proper tension before shipment, and being held in tension by special bolts, need not be disturbed when making adjustment for spacing of the rolls. The tension rods are extra heavy and provided with trigger lock nuts which afford quick release for adjustments when adding shims to change the spacing of rolls or removing shims to take up for wear on the shells.

Full detailed specifications will be furnished upon request to cover any particular size and type of roll.

FOR THE CARE AND UPKEEP OF CRUSHING ROLLS
ALSO DATA
FOR THE DETERMINATION OF SIZES OF FEED, SPEEDS
AND CAPACITIES,
SEE BULLETIN No. 1817A

ALLIS-CHALMERS MANUFACTURING COMPANY

Cut No. 12912



"Anaconda" Type, Straight Line Rolls

For Clearance Dimensions, See Page 7

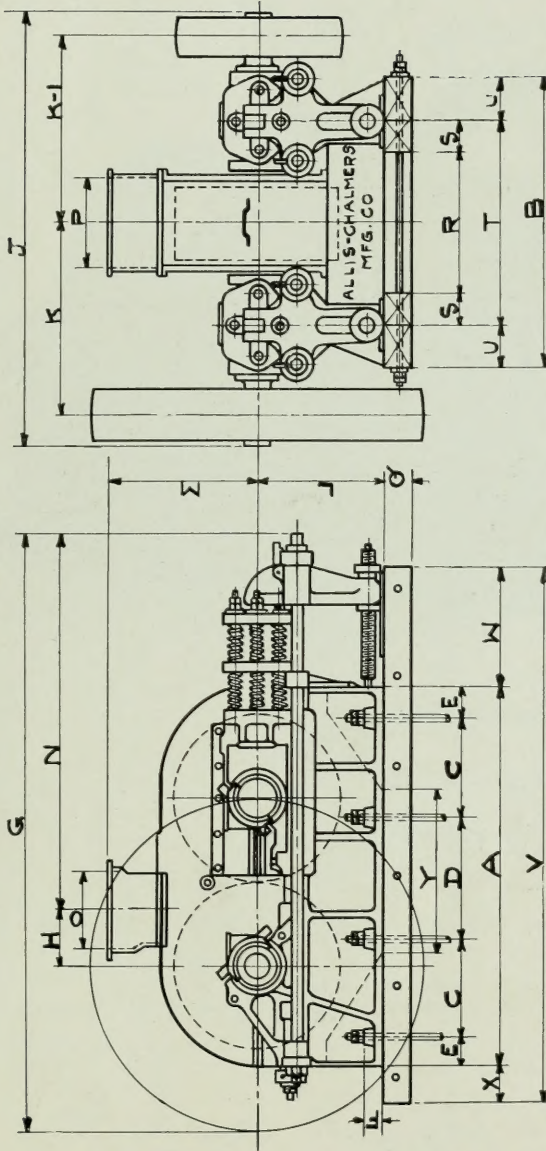
STANDARD SIZES OF "ANACONDA" ROLLS

Size of Rolls, Inches, Diameter By Face	Size of Driving Pulleys	Revolutions per Minute	Total Weight Pounds
40" x 15"	One 96" x 12 $\frac{1}{2}$ " One 48" x 12 $\frac{1}{2}$ "	50 to 100	38,000
40" x 20"	One 96" x 12 $\frac{1}{2}$ " One 48" x 12 $\frac{1}{2}$ "	50 to 100	42,000
40" x 30"	One 96" x 12 $\frac{1}{2}$ " One 48" x 12 $\frac{1}{2}$ "	50 to 100	50,000
40" x 36"	One 96" x 12 $\frac{1}{2}$ " One 48" x 12 $\frac{1}{2}$ "	50 to 100	52,000
54" x 16"	One 108" x 17" One 54" x 13"	50 to 85	88,000
54" x 20"	One 108" x 17" One 54" x 13"	50 to 85	90,000
54" x 24"	One 108" x 17" One 54" x 13"	50 to 85	94,000

CRUSHING ROLLS

CLEARANCE DIMENSIONS "ANACONDA" TYPE ROLLS

Cut No. 12081

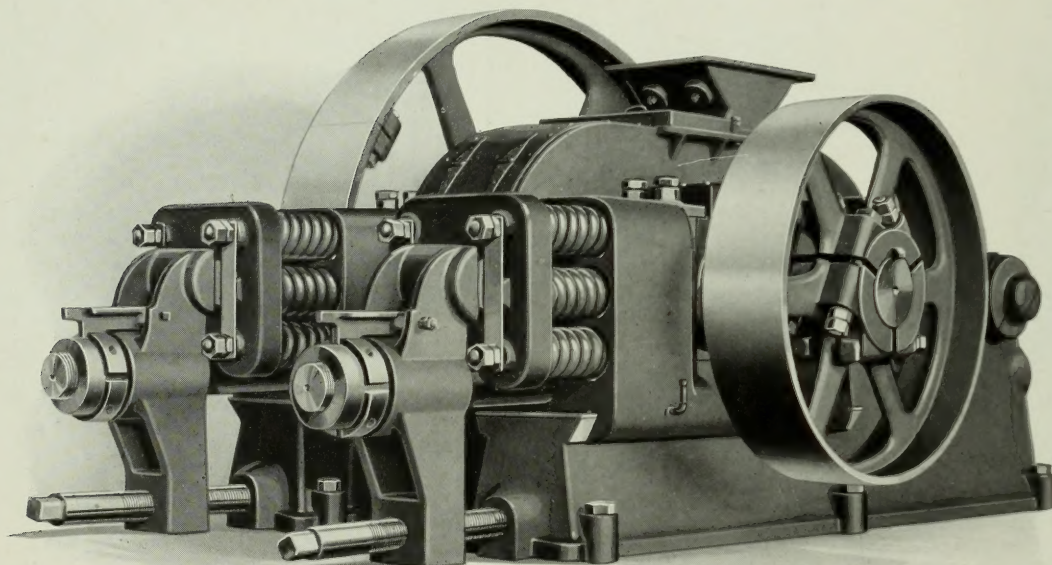


DIMENSIONS OF ROLLS

SIZE	A	B	C	D	E	F	G	H	J	K	K-I	L	M	N
Inches														
40"x15"	8'-0"	5'-2 1/2"	3'-3"	*	9"	4"	12'-6"	10 3/4"	9'-1 1/2"	3'-11"	3'-11"	3'-1"	3'-2 1/4"	7'-2 1/2"
40"x20"	8'-0"	5'-7 1/2"	3'-3"	*	9"	4"	12'-6"	10 3/4"	9'-6 1/2"	4'-1 1/2"	4'-1 1/2"	3'-1"	3'-2 1/4"	7'-2 1/2"
40"x30"	8'-0"	6'-5 1/2"	3'-3"	*	9"	4"	12'-6"	10 3/4"	10'-4 1/2"	4'-6 1/2"	4'-6 1/2"	3'-1"	3'-2 1/4"	7'-2 1/2"
40"x36"	8'-0"	6'-11 1/2"	3'-3"	*	9"	4"	12'-6"	10 3/4"	10'-10 1/4"	4'-9 1/2"	4'-9 1/2"	3'-1"	3'-2 1/4"	7'-2 1/2"
54"x16"	10'-3"	7'-3"	2'-8"	3'-3"	10"	6 1/2"	16'-4 3/4"	18"	11'-7"	5'-0"	5'-0"	3'-5"	4'-1 1/4"	10'-2 3/4"
54"x20"	10'-3"	7'-7"	2'-8"	3'-3"	10"	6 1/2"	16'-4 3/4"	18"	11'-11"	5'-2"	5'-2"	3'-5"	4'-1 1/4"	10'-2 3/4"
54"x24"	10'-3"	7'-11"	2'-8"	3'-3"	10"	6 1/2"	16'-4 3/4"	18"	12'-3"	5'-4"	5'-4"	3'-5"	4'-1 1/4"	10'-2 3/4"
Inches	O	P	Q	R	S	T	U	V	W	X	Y	Holding Down Bolts	Large Pulley	Small Pulley
40"x15"	18 1/2"	10 1/4"	8"	3'-3"	5 3/4"	4'-2 1/2"	6"	11'-7"	2'-0"	8"	2'-0"	1 3/4"	96"x12 1/2"	48"x12 1/2"
40"x20"	18 1/2"	24 1/4"	8"	3'-8"	5 3/4"	4'-7 1/2"	6"	11'-7"	2'-0"	8"	2'-0"	1 3/4"	96"x12 1/2"	48"x12 1/2"
40"x30"	18 1/2"	29'-10 1/4"	8"	4'-6"	5 3/4"	5'-5 1/2"	6"	11'-7"	2'-0"	8"	2'-0"	1 3/4"	96"x12 1/2"	48"x12 1/2"
40"x36"	18 1/2"	3'-2 1/4"	8"	3'-0"	5 3/4"	5'-11 1/2"	6"	11'-7"	2'-0"	8"	2'-0"	1 3/4"	96"x12 1/2"	48"x12 1/2"
54"x16"	2'-3"	2'-1"	8"	3'-3"	10"	4'-8"	14"	14'-6"	3'-3"	12"	4'-9"	2"	108"x17"	54"x13"
54"x20"	2'-3"	2'-1"	8"	3'-3"	10"	4'-8"	14"	14'-6"	3'-3"	12"	4'-9"	2"	108"x17"	54"x13"
54"x24"	2'-3"	2'-5"	8"	3'-11"	10"	5'-6"	14"	14'-6"	3'-3"	12"	4'-9"	2"	108"x17"	54"x13"

* Only Three Bolts in 40" Roll. Equally Spaced.

Cut No. 11617



“XX” TYPE STRAIGHT LINE ROLLS

For Clearance Dimensions See Page 9

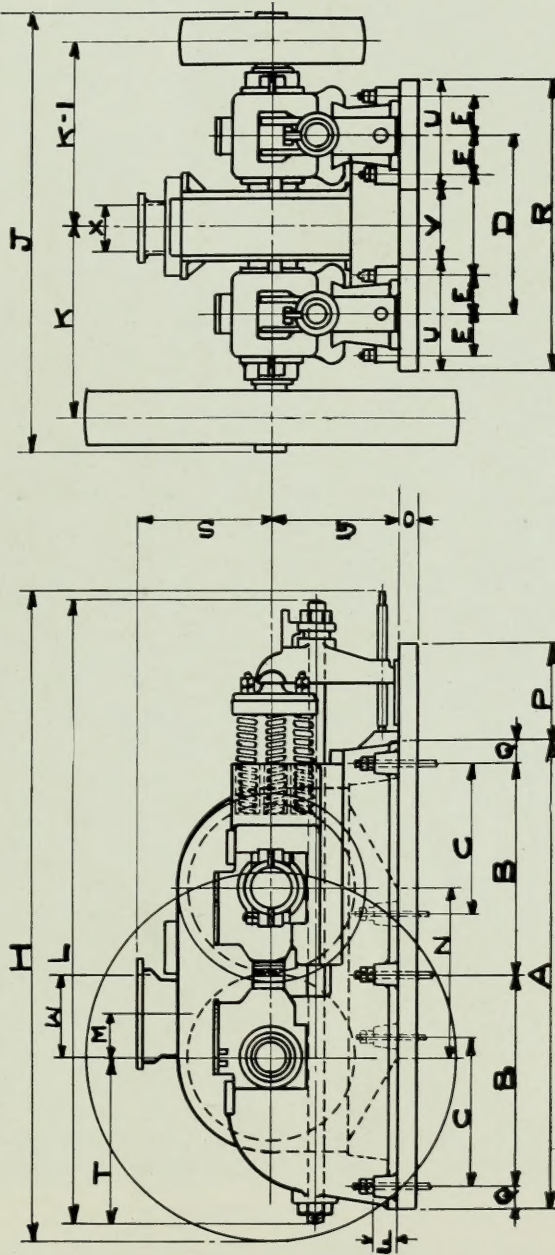
STANDARD SIZES OF “XX” ROLLS

Size of Rolls, Inches Diameter By Face	Size of Driving Pulleys, Inches,	Revolutions Per Minute	Weight Pounds
48"x16".....	One 108"x17" and One 54"x13"	50 to 100	75000
54"x24".....	One 120"x21" and One 60"x15"	50 to 85	136000
72"x24".....	One 120"x26" and One 72"x15"	80 to 120	230000

CRUSHING ROLLS

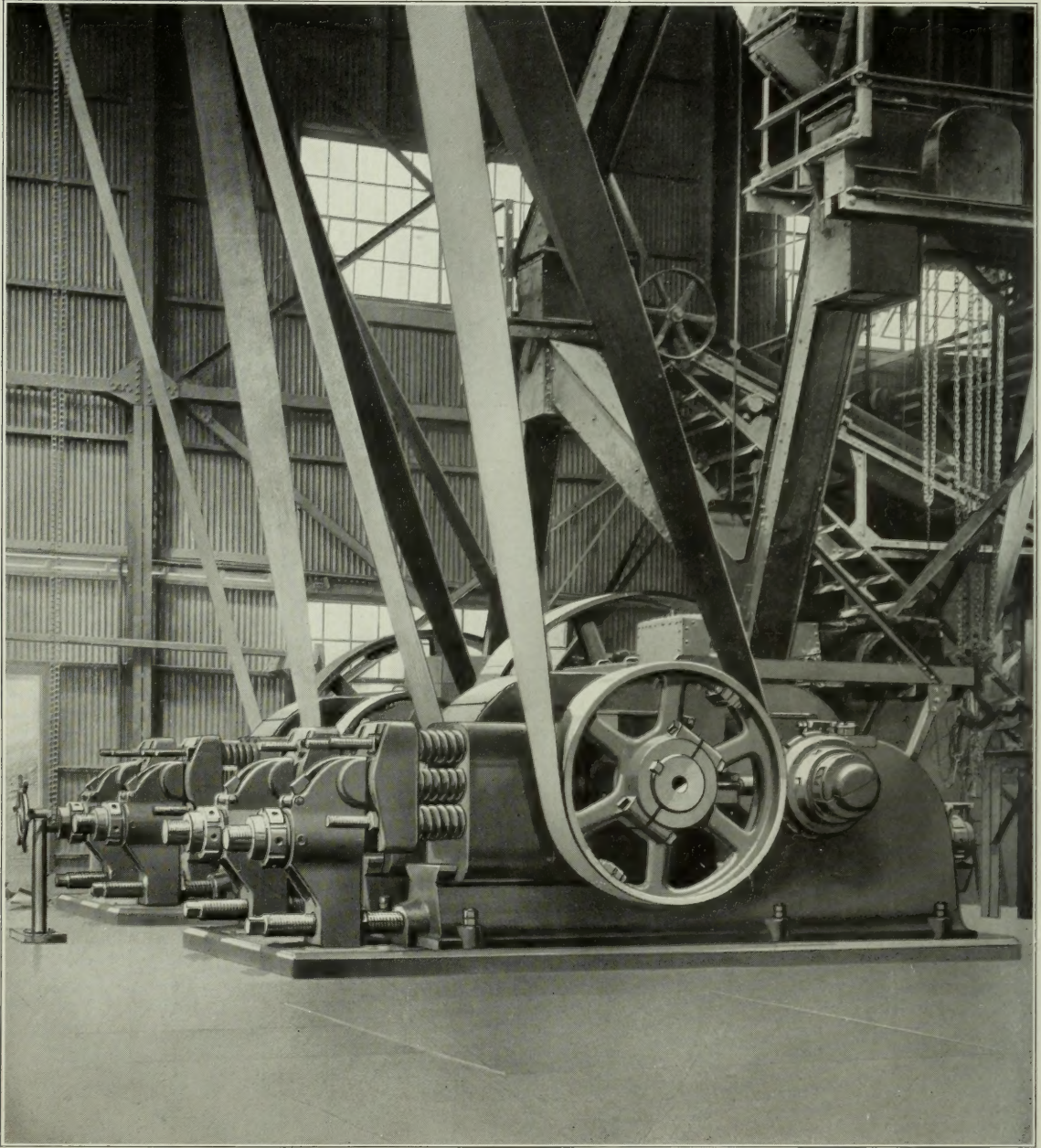
CLEARANCE DIMENSIONS "XX" TYPE STRAIGHT LINE ROLLS

Cut No. 12083



DIMENSIONS OF ROLLS

SIZE	A	B	C	D	E	F	G	H	J	K	K-I	L	M	N	O
Inches															
48"x16"	11'-3"	5'-1 1/2"	*	4'-4"	11"	6"	3'-0"	15'-6 1/2"	10'-6"	4'-8"	4'-5"	14'-7"	12"	4'-2"	8"
54"x24"	13'-1"	*	4'-2"	5'-8"	14"	6"	3'-6"	17'-10 1/2"	12'-10 1/2"	5'-9"	5'-6"	17'-7"	18"	4'-11"	8"
72"x24"	16'-5 1/2"	*	*	5'-10"	15"	6"	4'-8"	*	19'-6"	*	*	21'-0"	*	6'-6"	8"
	P	Q	R	S	T	U	V	W	X		Holding Down Bolts		Large Pulley		Small Pulley
48"x16"	2'-2 1/2"	6"	6'-10 1/2"	3'-2"	3'-9"	2'-8"	18 1/2"	2'-2 1/2"	16"		2"		108"x17"		54"x13"
54"x24"	2'-9 1/2"	10 1/2"	8'-10 1/2"	4'-0"	4'-8 1/2"	3'-2"	2'-6"	2'-3"	2'-0"		2"		120"x21"		60"x15"
72"x24"	*	10"	9'-2"	4'-7"	5'-7 1/2"	*	*	2'-3"	2'-0"		2 1/4"		120"x26"		72"x15"

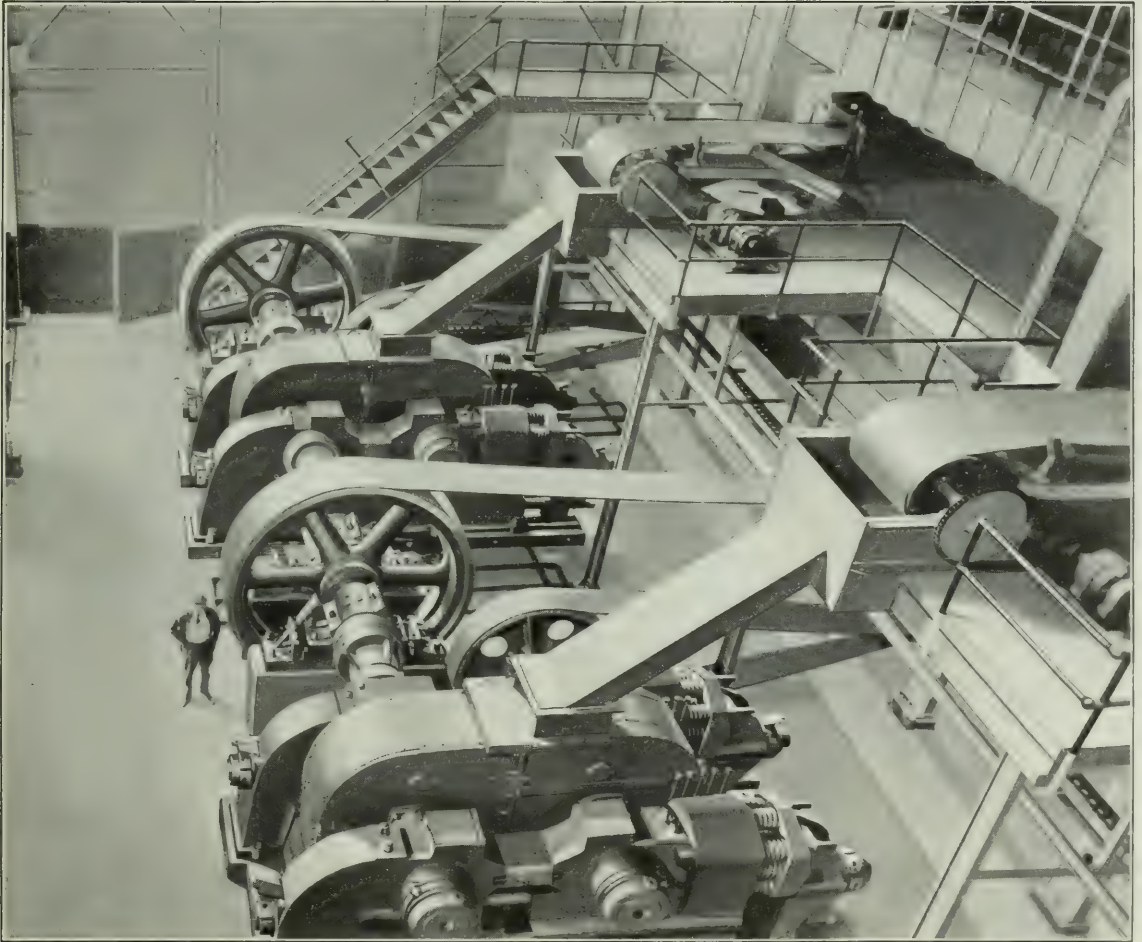


INSTALLATION OF "XX" TYPE CRUSHING ROLLS
2 Sets 54" x 24" Rolls

Burro Mountain Copper Company
Tyrone, New Mexico.
(Copper Concentrating Plant)

CRUSHING ROLLS

Cut No. 16847



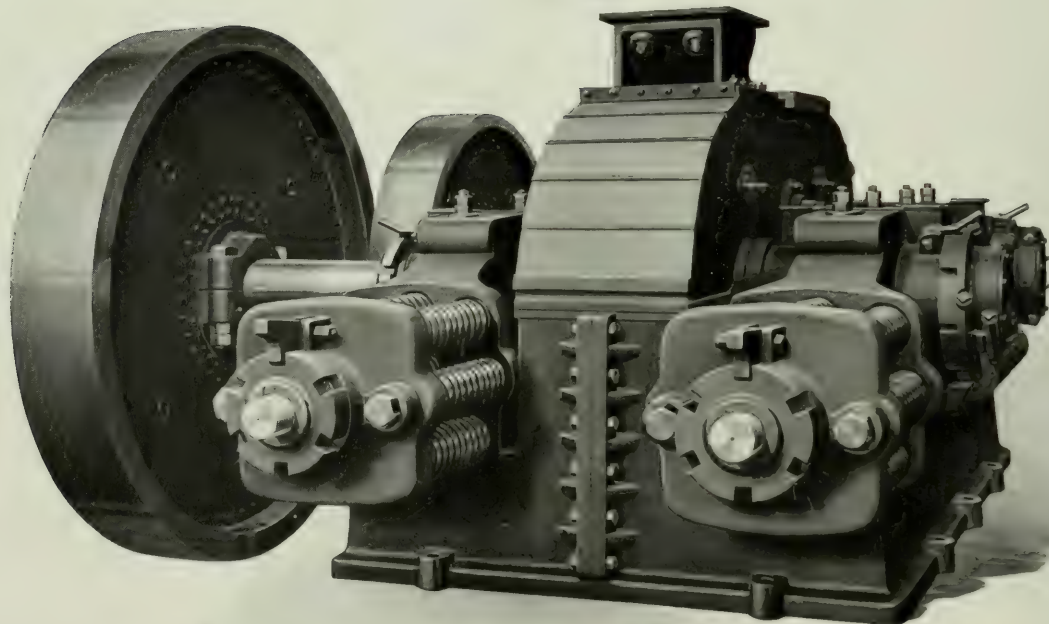
INSTALLATION OF "XX" TYPE CRUSHING ROLLS
2 Sets 72" x 24"

Miami Copper Co.
Miami, Arizona.

(Copper Concentrating Plant)

ALLIS-CHALMERS MANUFACTURING COMPANY

Cut No. 12329



72" x 20" "A" Type Rolls
Special Drive

For Clearance Dimensions, See Page 13

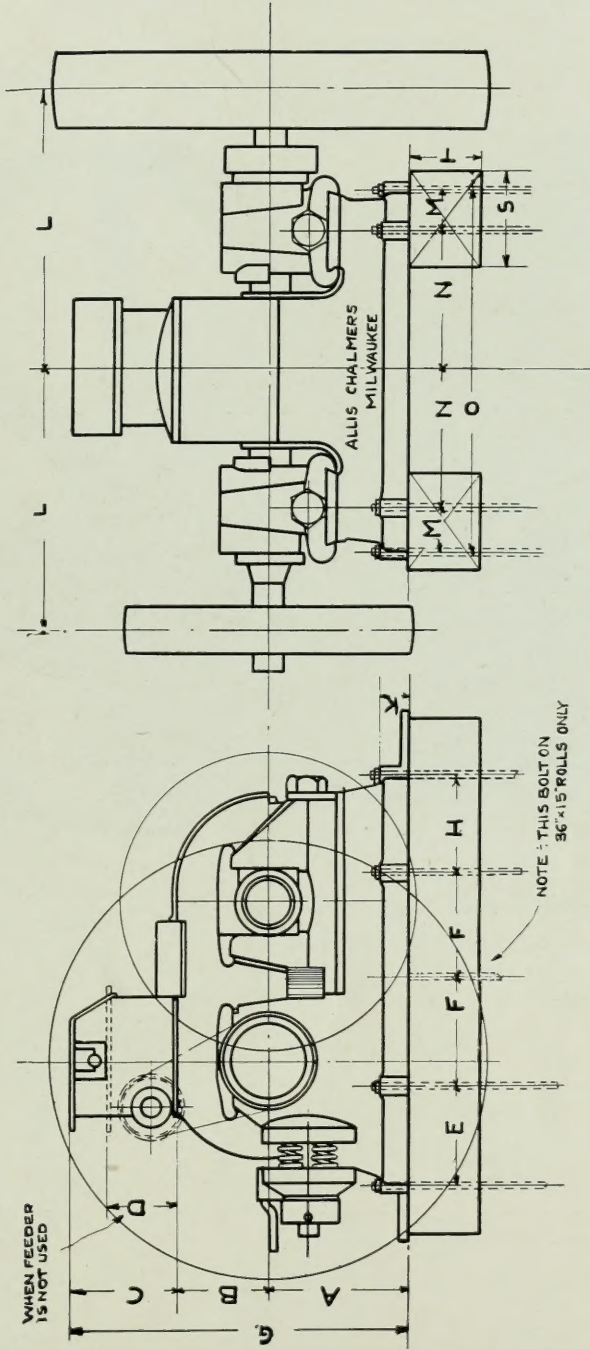
STANDARD SIZES OF "A" TYPE ROLLS

Size of Rolls, inches Diameter by Face	Size of Driving Pulleys, inches	Revolutions per Minute	Weight Pounds
26" x 15".....	One 72"x12½" and one 48"x 8½"	75 to 125	16,500
36" x 15".....	One 96"x15½" and one 72"x 8½"	40 to 100	33,000
72" x 20".....	One 120"x19" and one 84"x15"	80 to 120	220,000

CRUSHING ROLLS

CLEARANCE DIMENSIONS "A" TYPE CRUSHING ROLLS

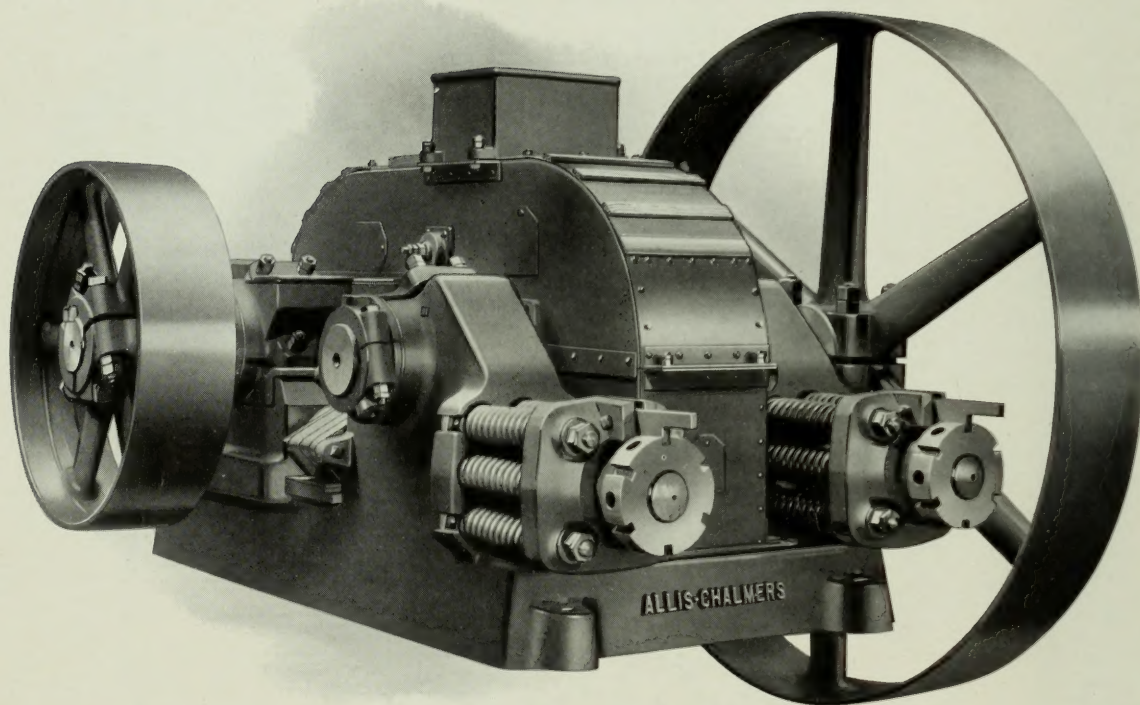
Cut No. 4243



Size of Rolls		DIMENSIONS OF ROLLS													Wood Frame			
Inches	A	B	C	D	E	F	G	H	K	L	M	N	O	Holding Down Bolts	Large Pulley	Small Pulley	S	T
26" x 15"	23"	15"	17"	12"	10½"	13"	4'-7"	20½"	4¾"	3'-9¼"	6½"	22¾"	4'-10½"	1"	72" x 12½"	48" x 8½"	16"	6"
36" x 15"	2'-5"	19"	17"	12"	15¾"	2'-4"	5'-5"	16½"	4"	4'-6½"	7⅝"	2'-2¾"	5'-9"	1"	96" x 15½"	72" x 8½"	18"	6"
72" x 20"	4'-3"	3'-4¾"	...	17"	3'-6"	3'-6"	9'-0¼"	3'-6"	6"	6'-5¼"	22¼"	2'-6½"	8'-9½"	2"	120" x 19"	84" x 15"	42"	8"

ALLIS-CHALMERS MANUFACTURING COMPANY

Cut No. 13799



STANDARD SIZES OF TYPE "B" ROLLS

See Bulletin 1815A

Size of Rolls, Inches Diameter by Face	Size of Driving Pulleys	Revolutions Per Minute	Total Weight Pounds
24" x 14".....	One 60"x 8½" and one 26"x 8½"	100 to 160	12000
30" x 14".....	One 78"x10½" and one 34"x10½"	75 to 130	19000
36" x 16".....	One 84"x10½" and one 42"x10½"	50 to 100	25000
42" x 16".....	One 96"x15½" and one 48"x12½"	45 to 90	37000

For Sampling Rolls 24" dia. and under, See Bulletin No. 1812.

Allis-Chalmers Manufacturing Company

PRINCIPAL PRODUCTS

AIR BRAKES

AIR COMPRESSORS

Steam Driven
Belt Driven
Electrically Driven, Portable
Electrically Driven, Stationary
Hydraulic Driven

CEMENT MACHINERY

Agitators
Air Slurry Pumps
Balls, forged steel
Ballpeb Mills
Compeb Mills
Concave
Conveyors
Crushing Rolls
Dust Collectors
Elevators
Fairmount Crushers
Feeders
Gyratory Crushers
Jaw Crushers
Perforated Metals
Preliminators
Pulverized Coal Plants
Rotary Kilns and Auxiliary Equipment
Rotary Coolers
Rotary Dryers
Revolving Screens
Tube Mills
Wash Mills
Complete Cement Plants

CONDENSERS

Barometric
Jet
Surface

CRUSHING MACHINERY

Agricultural Plants
Bin Gates
Conical Screens
Conveyors
Crushing Rolls
Dust Collectors
Elevators
Fairmount Crushers
Feeders
Grizzlies
Gyratory Crushers
Hoists
Jaw Crushers
Perforated Metals
Portable Crushers
Pulverators
Revolving Screens
Shaking Screens
Stone and Sand Scrubbers
Stone and Sand Washers
Trolleys
Complete Fine Grinding Plants
Complete Crushing Plants

ENGINES

Corliss Engines
Gas Engines
Diesel Oil Engines
Blowing Engines
Rolling Mill Engines

FLANGED AND PRESSED PLATE WORK

FORGINGS

Alternating Current

Steam Turbo Generators
Water Wheel Type Generators
Engine Type Generators
Belted Type Generators
Frequency Changers
Synchronous Motor Generator Sets
Induction Motor Generator Sets
Synchronous Motors
Synchronous Condensers
Single Phase Induction Motors
Polyphase Induction Motors
Power Transformers
Distribution Transformers
Auto-Transformers
Motor Starters
Motor Driven Air Compressors
Switchboards

FLOUR MILL MACHINERY

Aspirators
Bolters, Universal
Bolting Cloth
Bolting Cloth Cleaners
Bran and Shorts, Dusters
Bran Packers
Conveyors, Spiral
Corn Mills
Fans
Feed Mills
Feed Screens
Flour Dressers
Flaking Machines
Flour Feeders and Mixers
Flour and Bran Packers
Granulators
Purifiers
Reels
Rolls
Roller Mills
Rolling Screens
Scalpers

HOISTING EQUIPMENT

Hoists, Electric
Hoists, Steam
Cages, Hoisting
Skips, Hoisting
Sheaves, Hoisting

HYDRAULIC MACHINERY

Francis Turbines
Impulse Wheels
Oil Pressure Governors
Pressure Regulators
Butterfly Valves
Accessories

MINING AND METALLURGICAL MACHINERY

Concentrating Plant Equipment
Copper Converting Plant Equipment
Cyanide Plant Equipment
Ore Washing Plant Equipment
Refining Plant Equipment
Roasting Plant Equipment
Sampling Plant Equipment
Smelting Plant Equipment
Stamp Mill Equipment
breakers, McGregor Skull
Cars, Mould and Slag
Classifiers, Ore, Pulp and Sand
Converters, Copper
Crushers, Blake and Dodge Jaw
Elevators, Vertical Mill
Feeders, Ore and Rock
Furnaces, Copper and Lead Smelting
Furnaces, Roasting
Gates, Bin
Granulators, Ball and Pebble
Grinders, Ore and Sample
Grizzlies, Stationary and Moving
Jigs, Hancock and Hartz
Machines, Copper and Lead Casting
Machines, Flotation
Mills, Rod
Moulds, Bullion, Copper and Lead
Pots, Slag
Retorts, Gold and Silver
Rolls, Ore and Rock Crushing
Samplers, Ore and Tailings
Stamps, Gravity
Stamps, Tremain Steam
Trommels or Screens, (Revolving)
Vanners, Frue and Isbell
Washers, Log

ELECTRICAL APARATUS

Direct Current

Steam Turbo Generators
Water Wheel Type Generators
Engine Type Generators
Belted Type Generators
Three Wire Generators
Railway Generators
Electrolytic Generators
Rotary Converters
Gasoline Engine Generator Sets
Constant Speed Motors
Adjustable Speed Motors
Balancer Sets
Motor Generator Sets
Motor Driven Air Compressors
Switchboards

PERFORATED METALS

POWDERED COAL PLANTS

POWER TRANSMISSION MACHINERY

Belt Tighteners
Boxes
Couplings
Gears
Hangers
Pulleys
Rope Sheaves
Shafting

PUMPING MACHINERY

Centrifugal Pumps
Fire Service Pumps
Geared Pumps
High Duty Reciprocating Pumping Engines
Motor Driven Plunger Pumps
Motor Driven Mine Pumps
Hydraulic Pressure Pumps
Oil Line Pumps
Screw Pumps

SAW MILL MACHINERY

Band Mills, Double Cutting
Band Mills, Single Cutting
Band Mills, Telescopic
Band Re-saws, Horizontal
Band Re-saws, Vertical
Board Lifters, Steam
Cant Flippers, Steam
Canting Machine, Overhead
Carriages
Circular Saw Mills
Conveying Machinery
Cutting off Saws, Steam Feed
Edgers
Edging Grinders
Feeds, Steam, Direct Acting
Feeds, Steam, Twin Engine
Filling Room Tools
Lath Mills and Bolters
Live Rolls and Drives
Log Chains
Log Jacks
Log Loaders
Log Turners
Niggers, Steam
Set Works
Slashers
Steam Feed Valves
Stock Lifters, Steam
Transfers
Trimmers

TIMBER TREATING AND PRESERVING MACHINERY

TRACTORS

TURBINES—STEAM

TURBINES—WATER

Special Applications

Steel Mill Motors
Adjustable Speed Rolling Mill Drives
Blooming and Reversing Mill Drives
Hoist Motors
Illger Flywheel Motor Generator Sets
Cement Mill Drives
Centrifugal Pump Motors
Reciprocating Plunger Pump Drives
Sectionalized Paper Mill Drives
Rubber Mill Drives
Flour Mill Drives
Fly Wheel Equalizing Sets
Machine Tool Drives
Ship Propulsion Drives
Air Brake Equipments

Allis-Chalmers Manufacturing Company

General Offices, Milwaukee, Wis.

DISTRICT OFFICES

Atlanta, Ga., 1104-1106 Healey Bldg.	Los Angeles, Cal., 623-625 Title Insurance Bldg.
Birmingham, Ala., 1010-1012 Brown-Marx Bldg.	Milwaukee, Wis., West Allis Works.
Boston, Mass., 723-724 State Mutual Bldg.	Minneapolis, Minn., 707-711 Metropolitan Life Bldg.
Buffalo, N. Y., 574-576 Ellicott Square Bldg.	New Orleans, La., 719-723 Maison Blanche Bldg.
Charlotte, N. C., 215 Latonia Bldg.	New York, N. Y., 50 Church Street.
Chicago, Ill., 1321 Peoples Gas Bldg.	Philadelphia, Pa., 813-816 Franklin Trust Bldg.
Cincinnati, O., 1720 First National Bank Bldg.	Pittsburgh, Pa., 1207-1210 Park Bldg.
Cleveland, O., 1119-1127 Schofield Bldg.	Portland, Ore., 505-506 Lumbermen's Bldg.
Dallas, Texas, 1101-1103 Patterson Ave.	St. Louis, Mo., 2188-2189 Railway Exchange Bldg.
Denver, Colo., Symes Bldg.	Salt Lake City, Utah, 608-610 Kearns Bldg.
Detroit, Mich., 1828-1829 Ford Bldg.	San Francisco, Cal., 741-751 Rialto Bldg.
Duluth, Minn., 709 Alworth Bldg.	Seattle, Wash., 115 Jackson Street.
Indianapolis, Ind., 305 Merchants Bank Bldg.	Toledo, O., 819 Ohio Bldg.
Kansas City, Mo., 1410-1412 Waldheim Bldg.	Wilkes-Barre, Pa., 904 Coal Exchange Bldg.

FARM TRACTOR DISTRICT OFFICES

Allis-Chalmers Mfg. Co., 1101-1103 Patterson Ave., Dallas, Texas.

FOREIGN DISTRICT OFFICES

London, England, 728 Salisbury House, London Wall, E. C. 2
Paris, France, 3 Rue Taitbout.
Santiago, Chile, Calle Bandera 261, Casilla 2653.

CANADIAN REPRESENTATIVES

Canadian Allis-Chalmers, Limited:
Toronto, Ontario

FOREIGN SALES AGENCIES

Shanghai, China	American Trading Company, 25 Broad St., New York
Hankow, China	American Trading Company, 25 Broad St., New York
Pekin, China	American Trading Company, 25 Broad St., New York
Tientsin, China	American Trading Company, 25 Broad St., New York
Tokyo, Japan	American Trading Company, 25 Broad St., New York
Kobe, Japan	American Trading Company, 25 Broad St., New York
Yokohama, Japan	American Trading Company, 25 Broad St., New York
Sao Paulo, Brazil	Assumcao & Cia
Johannesburg, South Africa	Edward L. Bateman
Mexico City, Mexico	H. W. Beers Electric Co., S. A.
Mexico City, Mexico	R. E. Briggs Co., S. A.
Madrid, Spain	Gumersindo Garcia
Lisbon, Portugal	Monteiro Gomes, Limitada, 15-17 East 40th St., New York
Honolulu, Hawaii	Honolulu Iron Works
Manila, P. I.	Honolulu Iron Works
Antofagasta, Chile	Suc. J. K. Robinson, 140 Front St., New York, N. Y.
Iquique, Chile	Suc. J. K. Robinson, 140 Front St., New York, N. Y.
Havana, Cuba	Thrall Electric Company
Caracas, Venezuela	Tomas Pacanins & Company

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